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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CLINTON GENE LASCHKEWITSCH, ROBERT MILLER, VICKI LYNN MOREY, and LAURIE ANN WILLIAMS

Appeal 2008-3458
Application 09/918,746[1]
Technology Center 2400

Decided[2]: April 21, 2009

Before HOWARD B. BLANKENSHIP, JAY P. LUCAS, and ST. JOHN COURTENAY III, *Administrative Patent Judges*.

LUCAS, *Administrative Patent Judge*.

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[1] Application filed July 31, 2001. The real party in interest is International Business Machines (IBM).

[2] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail date (paper delivery) or Notification Date (electronic Delivery).

DECISION ON APPEAL

STATEMENT OF THE CASE

Appellants appeal from a final rejection of claims 8-23 under authority of 35 U.S.C. § 134(a). The Board of Patent Appeals and Interferences (BPAI) has jurisdiction under 35 U.S.C. § 6(b). Claims 1-7 have been canceled.

Appellants' invention relates to a method, system, and memory for determining and managing group membership using domain groups in a distributed computing environment. More specifically, a method of managing membership of computing tasks (jobs) executed on computers capable of working together is provided. Dividing tasks among computers offers data processing efficiencies. However, managing the division of these tasks can be problematic. This invention can assign a computing task or process (job) to a processor (node) in a computing cluster after checking whether the process has the appropriate membership characteristics to join the group performing the tasks. In the words of the Appellants:

> System and method for managing membership of a group of jobs in a computing environment is provided. In one embodiment, a domain group, a set of interfaces to manage the domain group, and cluster-assigned member names to identify the members in a group is provided. The interfaces allow a group to be created and allow members to be added, removed and joined. A copy of the domain group is associated with each member job and indicates each job that is a member of a particular group. Management of a group is made by configuring each of the jobs of the group to assess its respective

copy of the domain group in order to service requests, such as a request to join the group.
(Abstract, Spec. 20).

Claims 8 is exemplary:

8. A method of managing membership of jobs in a cluster, the method comprising:

(i) upon receiving a request to create a group comprising at least two jobs:

creating, on a respective node on which each respective job is running, a respective list indicating each of the at least two jobs; and

(ii) upon receiving a request to join the group from a requesting member job having membership to the group:

accessing each respective list of each job of the group to determine whether the requesting member job is included in the respective list.

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Badovinatz	US 6,026,426	Feb. 15, 2000
Elley	US 6,883,100 B1	Apr. 19, 2005 (filed May 10, 1999)

REJECTION

The Examiner rejects the claims as follows:

R1: Claims 8-23 stand rejected under 35 U.S.C. § 103(a) for being obvious over Badovinatz in view of Elley.

Appellants contend that the claimed subject matter is not rendered obvious by Badovinatz and Elley for failure of the references to teach all of the limitations of the claims. The Examiner contends that each of the claims is properly rejected.

Rather than repeat the arguments of Appellants or the Examiner, we make reference to the Briefs and the Answer for their respective details. Only those arguments actually made by Appellants have been considered in this opinion. Arguments that Appellants could have made but chose not to make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).[3]

We affirm the rejection.

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[3] Appellants have not presented any substantive arguments directed separately to the patentability of the dependent claims or related claims in each group, except as will be noted in this opinion. In the absence of a separate argument with respect to those claims, they stand or fall with the representative independent claim. *See In re Young,* 927 F.2d 588, 590 (Fed. Cir. 1991).

ISSUE

The issue is whether Appellants have shown that the Examiner erred in rejecting the claims under 35 U.S.C. § 103(a). The issue turns on whether the references Badovinatz and Elley disclose or suggest "upon receiving a request to create a group comprising at least two jobs: creating, on a respective node on which each respective job is running, a respective list indicating each of the at least two jobs" and "upon receiving a request to join the group from a requesting member job having membership to the group: accessing each respective list of each job of the group to determine whether the requesting member job is included in the respective list," as claimed.

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence.

1. Appellants' invention relates to a method of managing jobs (computing tasks or processes) on a distributed computing system using domain name groups. (Spec. 2, para. [0001].) "Two or more of the nodes 106 of the distributed computing environment 100 may define a cluster. Further, within a cluster, one or more 'groups' may be defined. A group corresponds to a logical grouping of a member or members. In one embodiment, a 'member' is a job executing on one or more of the nodes within the cluster." (Spec. 9, para. [0037].) A new job requests

membership to a group, but only joins a group as a member process if certain criteria are satisfied. (See Spec. 13, para. [0049] and Fig. 5.)

2. The reference Badovinatz is concerned with processes (called jobs in Appellants' claims), or computing tasks, running on processors (called nodes in Appellants' claims) organized in groups in a distributed computing system. (Badovinatz, col. 3, l. 49 and col. 5, ll. 1-13). Badovinatz discloses processes becoming members of process groups, as well as membership lists associated with those groups. (See col. 10, ll. 14-16 and col. 6, l. 5.) Processors (nodes) request to be added to processor groups when processes (jobs) executing on the processors wish to join process groups. (See Badovinatz, col. 6, l. 66 to col. 7, l. 2.) A voting mechanism determines whether processes qualify to join groups based on their respective attributes. (See Badovinatz, col. 12, ll. 54-59, col. 13, ll. 12-15 and ll. 51-53.) If certain processes that are members vote affirmatively to allow a process to join, a process requesting membership is added to the membership list. (See Badovinatz, col. 13, ll. 48-52.)

PRINCIPLES OF LAW

Appellants have the burden on appeal to the Board to demonstrate error in the Examiner's position. See *In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under 35 U.S.C. § 103] by showing insufficient evidence of *prima*

facie obviousness or by rebutting the *prima facie* case with evidence of secondary indicia of nonobviousness.") (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998)).

"In reviewing the [E]xaminer's decision on appeal, the Board must necessarily weigh all of the evidence and argument." *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Our reviewing court states in *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989) that "claims must be interpreted as broadly as their terms reasonably allow."

"What matters is the objective reach of the claim. If the claim extends to what is obvious, it is invalid under [35 U.S.C. § 103]." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 419 (2007). To be nonobvious, an improvement must be "more than the predictable use of prior art elements according to their established functions." *Id.* at 401.

"It is common sense that familiar items may have obvious uses beyond their primary purposes, and a person of ordinary skill often will be able to fit the teachings of multiple patents together like pieces of a puzzle." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. at 402.

"A court must ask whether the improvement is more than the predictable use of prior-art elements according to their established functions." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. at 401.

An obviousness "analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take

account of the inferences and creative steps that a person of ordinary skill in the art would employ." *KSR Int'l v. Teleflex Inc.*, 550 U.S. at 418 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

In sustaining a multiple reference rejection under 35 U.S.C. § 103(a), the Board may rely on one reference alone without designating it as a new ground of rejection. *In re Bush*, 296 F.2d 491, 496 (CCPA 1961); *In re Boyer*, 363 F.2d 455, 458 n.2 (CCPA 1966).

ANALYSIS

From our review of the administrative record, we find that the Examiner has presented a prima facie case for the rejection of Appellants' claims under 35 U.S.C. § 103(a). The prima facie case is presented on pages 2 to 3 of the Examiner's Answer.

In opposition, Appellants contend that even if combined as suggested in the Office Action, Badovinatz and Elley fail to disclose or suggest the limitations of independent claim 8 set forth above. (App. Br. 10, middle). Appellants present three main arguments.

Concerning the first argument, Appellants contend that "Figure 4 does not disclose a list; it discloses the actual processes being executed." (App. Br. 11, top.)

However, the Examiner does not rely upon Badovinatz's Fig. 4 alone. The Examiner also points out col. 6, lines 1 to 10 of Badovinatz. Badovinatz discloses a membership list being stored in the memory of each of the

processors. In referring to the written description, the Examiner establishes that each processor ("node" in Appellants' claim) has a copy of a list that includes the members. Likewise, each processor that joins the group receives a copy of that membership list. (Badovinatz, col. 6, ll. 6-7.)

We appreciate the Examiner's analysis and supplement it by noting the following disclosure from Badovinatz:

> [T]he process is added to a membership list for that process group. This membership list is maintained by Group Services, for example, as an ordered list. In one example, it is ordered in sequence of joins. The first process to join is first in the list, and so forth.

(Badovinatz, col. 13, ll. 7-11)

It is clear from Badovinatz's disclosure above that processes are added to a process list when joining a group.

For the reasons stated above, the list as recited in representative claim 8 would have been obvious to a person of ordinary skill in the art at the time the invention was made. Accordingly, we find no error in the Examiner's analysis.

Concerning the second argument, Appellants contend that "a job is not synonymous with a processor." (App. Br. 11, bottom.)

The Examiner points out Fig. 4 of Badovinatz, which discloses "process X." (See Badovinatz, Fig. 4 and col. 4, l. 60.) The Examiner's analysis suggests that "process X" as disclosed in Badovinatz is the same as or similar to the claimed job. Appellants contend that the Examiner

improperly equates a job with a processor. To the contrary, we believe that the Examiner's analysis equates a *process* X with the claimed "jobs."

Thus, the salient question before us is whether a broad but reasonable interpretation of the claimed "jobs" encompasses Badovinatz's processes. It is our view that a person of ordinary skill in the art would have considered the terms "job," "process," and "task" to be equivalent. Given this construction, we find that the Examiner has not made an error with respect to the logic applied, because the claimed "jobs" are synonymous with processes, or computing tasks. (See *In re Zletz*, cited above.) We note that at the time the invention was made a person of ordinary skill in the art would have equated Badovinatz's processors with the claimed nodes. (FF#2.)

In the Reply Brief,[4] Appellants further contend that Badovinatz discloses only one process known as "process X."

Appellants express their contention as follows:

> Figure 4 includes only a single process ("process x") running on processing nodes 1 and 2.

(Reply Br. 2, bottom.)

We disagree with Appellants. The Examiner's analysis supports the conclusion that Process X in Badovinatz is merely a generic label that stands

[4] This particular argument was first raised in the Reply Brief – not the opening Brief – and is entitled to no consideration because it was not necessitated by a new point in the Answer. See *Optivus Technology, Inc. v. Ion Beam Applications S.A.*, 469 F.3d 978, 989 (Fed. Cir. 2006). However, in the interest of judicial economy, we respond.

for multiple possible processes. Since Badovinatz discloses multiple processes, or jobs, Appellants' arguments are not persuasive.

In line with the second argument, Appellants argue that "not only does Badovinatz not disclose groups of jobs, Badovinatz, in fact, discloses groups of processors." (App. Br. 11, middle).

We reiterate the Examiner's analysis, which correctly equates Badovinatz's processors with the claimed nodes and Badovinatz's processes with the claimed jobs. It follows that the group as recited in representative claim 8 is merely a construct. Groups provide associations between processes. Badovinatz's processes join groups by making membership requests. (FF#2.) Moreover, the groups of processes in Badovinatz are associated with membership lists that name multiple member processes. (*Id.*) Accordingly, we find no error in the Examiner's assessment of groups as recited in claim 8.

In view of the findings, we decline to find error in the Examiner's conclusion that the claim limitation "upon receiving a request to create a group comprising at least two jobs: creating, on a respective node on which each respective job is running, a respective list indicating each of the at least two jobs" reads on Badovinatz's list of members and groups of processes.

Concerning the third argument, Appellants contend that Elley fails to disclose a list.

Appellants express their contention as follows:

> Elley does not teach that the requesting member job has membership to the group and accessing each list of each job of the group to determine whether the requesting member job is included in each list. … In fact, Elley is only concerned with security within groups of servers and clients, but is no way directed towards groups of jobs, as claimed.

(App. Br. 12, middle).

Elley is relied upon by the Examiner to complete the obviousness rejection under 35 U.S.C. § 103(a). We consider the Elley reference supplemental to that of Badovinitz, discounting the need for further discussion of Elley.

We note that Badovinatz discloses that "the process is added to a membership list for that process group." (Badovinatz, col. 13, ll. 7-8.) Thus, a list of members is disclosed. The list disclosed in Badovinatz includes processes. Badovinatz further discloses a voting mechanism in which certain processes that are members of a group decide whether to allow a process into the group on the basis of a process' attributes. (FF#2.)

> [T]he first process to join a process group identifies a set of attributes for the group. These attributes are included as arguments in the join call sent by the process. … The providers [a type of process] can vote to continue the protocol and vote on this join again, or they can vote to reject or approve the join. … [T]he process is added to the end of the membership list for the group. Once the protocol is complete, the members of the group are notified of the result.

(Badovinatz, col. 13, ll. 13-15 and ll. 44-53)

We equate Badovinatz's voting mechanism with the claim limitation "accessing each respective list of each job of the group to determine whether the requesting member job is included in the respective list." The voting mechanism disclosed in Badovinatz involves determining whether processes qualify to join groups. (FF#2.) Qualifying to become a group member in Badovinatz hinges on a process' set of attributes. (*Id.*) Attributes are compared with attributes of a "member" (a process that already has status as a member of the group). (*Id.*) Reading representative claim 8 broadly but fairly, the limitation "accessing each respective list of each job of the group to determine whether the requesting member job is included in the respective list" reads on Badovinatz's voting mechanism for allowing membership to a group of processes.

Under 35 U.S.C. § 103(a), the question is not whether each and every element is arranged exactly as claimed, but instead whether the claim would have been obvious to a person of ordinary skill in the art. (See *KSR*, cited above.) That a membership list contains a list of processes would have been predictable to a person of ordinary skill in the art. We find nothing unpredictable about Appellants' combination of the prior art elements found in Badovinatz. (*Id.*)

The claimed method merely arranges known elements, such as processes, lists of member processes, and groups, like pieces of a puzzle. (*Id.*) Not surprisingly, the claimed method accomplishes a predictable result when accessing a list of member processes to determine whether a

requesting process can join: the job either joins or does not join the group. In light of the above disclosures and in view of the Supreme Court's guidance in *KSR*, we find Appellants' arguments are unpersuasive.

Finally, regarding independent claims 12 and 19, Appellants contend that "a processor group is not a group of jobs." (App. Br. 13, middle). Issues with respect to claims 12 and 19 are the same as those presented above regarding claim 8. Thus, Appellants' arguments as to claims 12 and 19 are not persuasive.

Appellants have based their appeal on the arguments presented above. We find no error in the Examiner's rejection of claims 8-23.

CONCLUSION OF LAW

Based on the findings of facts and analysis above, we conclude that the Examiner did not err in rejecting claims 8-23 under 35 U.S.C. § 103(a) for being obvious over Badovinatz alone.

DECISION

The Examiner's rejection of claims 8-23 is Affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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